NOISE AND QUALITY DETECTOR FOR USE WITH TURBO CODED SIGNALS

ABSTRACT OF THE DISCLOSURE

In one aspect this invention provides a method to operate a decoder, and a decoder that operates in accordance with the method. The method includes monitoring, during operation of the decoder on a signal received from a channel, the value of at least one extrinsic value; and based on the monitored at least one value, determining whether the signal comprises a valid code word or comprises only noise. In a preferred, but non-limiting embodiment, the decoder comprises one of a LogMap or a MaxLogMap turbo decoder, and the decoder forms a part of a baseband section of a wideband code division multiple access (WCDMA) user equipment. During the process of decoding rounds the absolute values of extrinsic values tend to increase, provided that the input signal contains a valid code word, as opposed to when the input signal contains only noise, and where determining accurately distinguishes a valid code word from noise, and may also obtain information that is indicative of the quality of the decoding process.